

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

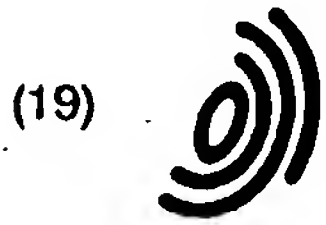
Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 684 578 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
10.04.1996 Bulletin 1996/15

(51) Int. Cl.⁶: G06K 11/12

(43) Date of publication A2:
29.11.1995 Bulletin 1995/48

(21) Application number: 95302931.1

(22) Date of filing: 28.04.1995

(84) Designated Contracting States:
AT BE CH DE ES FR GB IT LI NL SE

(30) Priority: 23.05.1994 US 247840

(71) Applicant: International Business Machines
Corporation
Armonk, N.Y. 10504 (US)

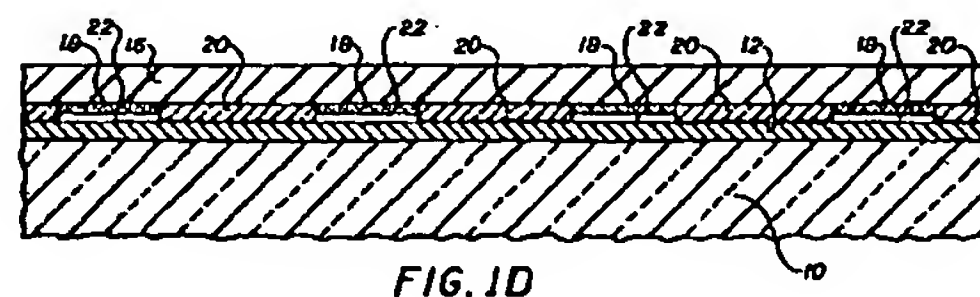
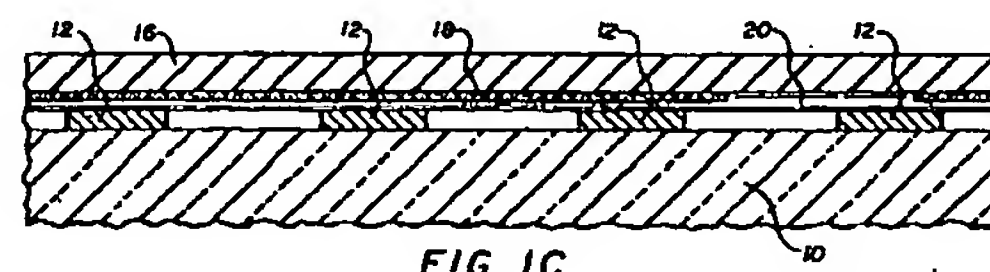
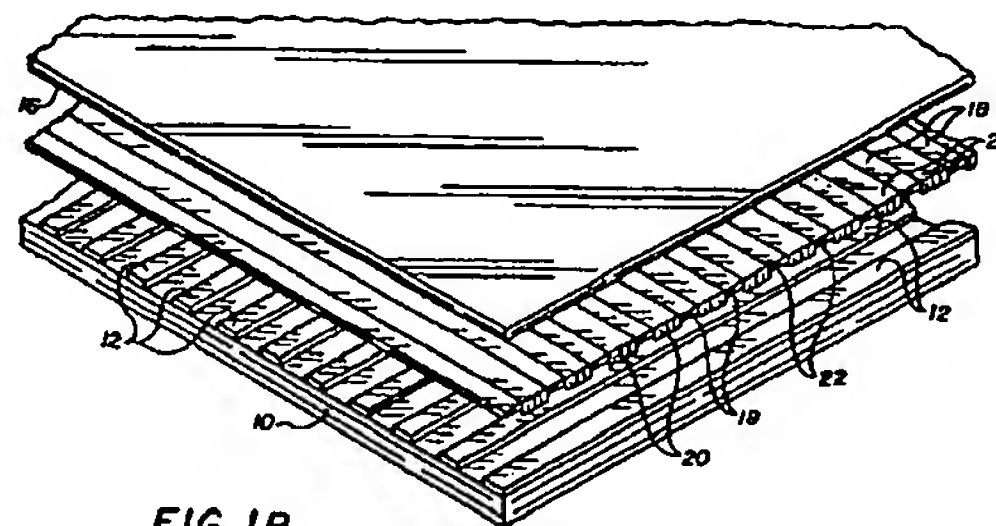
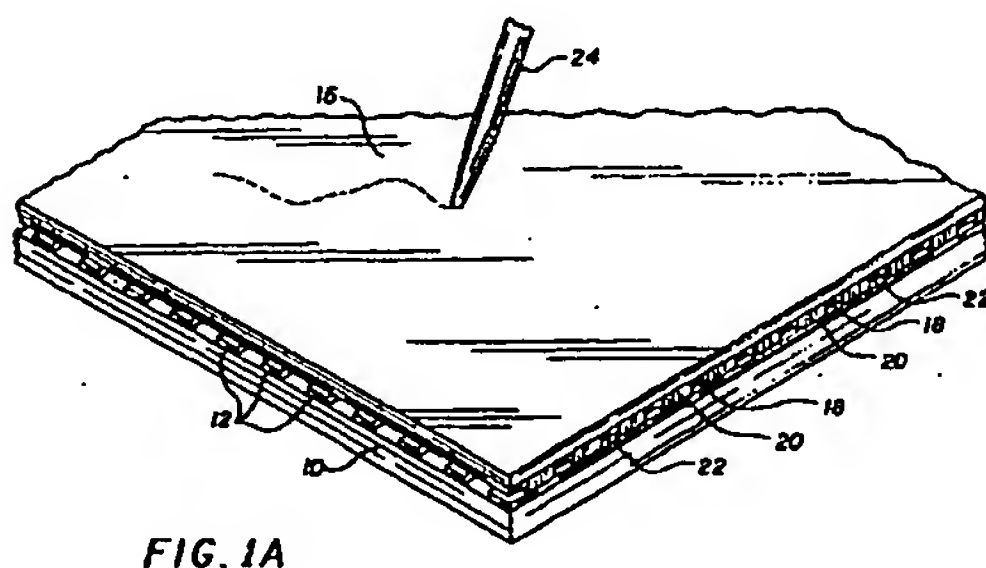
(72) Inventors:
• Buchanan, William Andrew
Strathclyde, Scotland ML4 1JD (GB)

• Eardley, Richard Allen
Ayrshire, Scotland KA30 9NL (GB)
• Tizzard, Anthony Richard
Ayrshire, Scotland KA30 9ER (GB)
• Utley, Brian George
Boca Raton, Florida 33486 (US)

(74) Representative: Williams, Julian David
IBM United Kingdom Limited,
Intellectual Property Department,
Hursley Park
Winchester, Hampshire SO21 2JN (GB)

(54) Simplified digital pad sensor

(57) A touchpad sensor comprising a first plurality of electrically conductive strips positioned proximate to a second plurality of electrically conductive strips. The conductive strips in each plurality lie substantially in a single plane and the two pluralities are skewed relative to one-another in plan view. Ideally, the pluralities are aligned orthogonally. The conductive strips are separated by insulators that extend beyond the surface of at least one of the pluralities of conductors to separate the conductors of one plurality from the conductors of the other plurality until a localized pressure is applied to a region of the pad. When a localized pressure is applied, the conductors and insulators deform until a conductor from the first plurality forms an electrically conducting path with at least one conductor from the second plurality, which can be detected using banks of drivers and receivers.



EP 0 684 578 A3

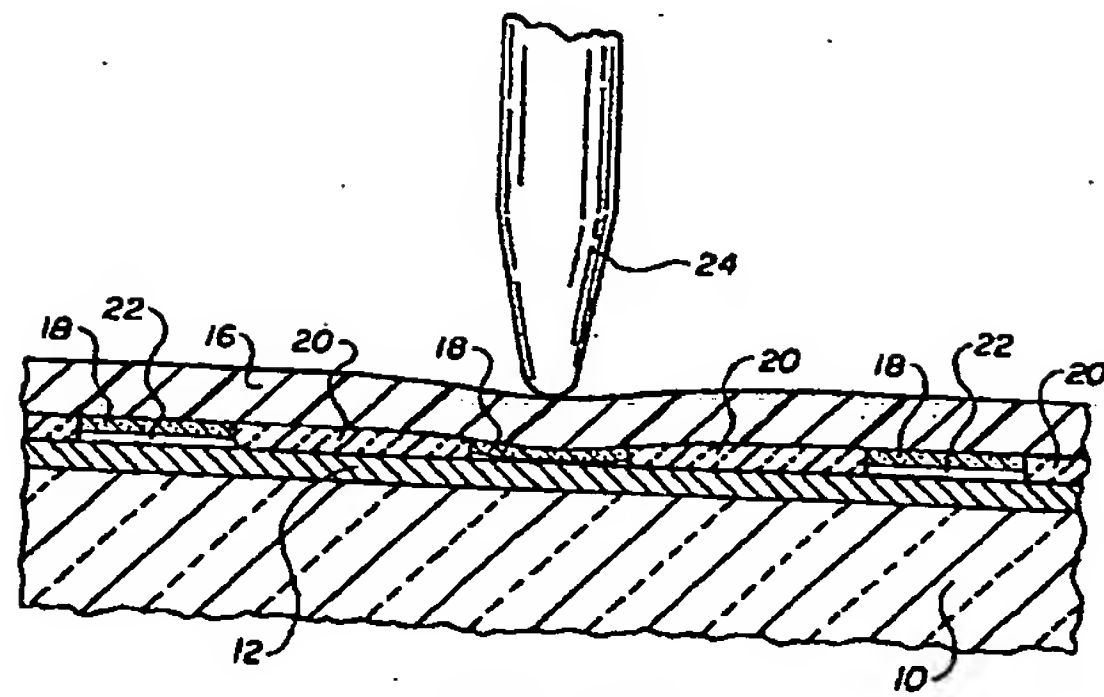


FIG. 1E



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 95 30 2931

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X Y A	US-A-4 126 760 (GORDON) * the whole document *	1-3,5 1,4,6 10	G06K11/12
Y	US-A-4 560 830 (PERL) * figures 2,3 * * column 2, line 45 - column 4, line 13 *	1,4,6	
A	THE INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH, vol.8, no.1, February 1989, MASS.,USA pages 38 - 62, XP28625 R.A.GRUPEN ET AL., 'A SURVEY OF GENERAL-PURPOSE MANIPULATION' * figure 4 * * page 42, right column, line 32 - page 43, left column, line 23 *	10-12	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			G06K G01L
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 31 January 1996	Examiner Weiss, P
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)



European Patent
Office

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

See Sheet B.

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



European Patent
Office

- B -

EP 95302931.1

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-9
Touchpad sensor
2. Claims 10-13
Fabrication of touchpad

THIS PAGE BLANK (USPTO)